

U.S. Patent Application No.: 10/056,777
Art Unit: 1714
Page 10

REMARKS

Reconsideration and continued examination of the above-identified application are respectfully requested. The claims have been amended as described in more detail below. No search is necessitated by this amendment and no new questions of patentability should arise, since the scope of this subject matter has already been examined by the Examiner. No new matter has been added. Finally this amendment places the application in condition for allowance. Therefore, entry of this amendment is respectfully requested.

Pending Claims

Claims 20, 25, and 29-41 have been allowed. Claims 1, 2, 6, 7, 12, 18, 21, and 27 have been amended to be dependent from allowed claim 20. Claims 28 and 42-44 have been amended to recite the molecular weight feature of allowed claim 20. Claim 19 has been cancelled without prejudice by this amendment. Finally, claim 26 has been amended to more clearly describe Applicant's invention. Specifically, this claim has been placed in independent form and the phrase "incorporated into a substrate" has been replaced with "a component of a substrate or a coating on the surface of a substrate". This amendment is supported by the present application, and, in particular, paragraph [0050]. No new matter has been added. Thus, claims 1, 2, 6, 7, 10, 12-18, and 20-44 are pending.

Summary of the Invention

The present invention relates inkjet ink systems which comprise a) a liquid vehicle, b) a colorant, and c) a gelling agent. The gelling agent may be incorporated either into the liquid vehicle, into a second jettable composition, or onto a substrate. The gelling agent may also be attached to the colorant. In addition, several methods of generating an image are also described which utilize compositions comprising a gelling agent.

U.S. Patent Application No.: 10/056,777
Art Unit: 1714
Page 11

Rejection of Claims under 35 U.S.C. § 102

The Examiner has rejected claims 1-2, 6-7, 10, 12 19, 21-24, and 26-28 under 35 U.S.C. § 102(b) as being anticipated by Grezzo Page et al. (U.S. Patent No. 5,708,095).

In paragraph 3 of the Final Office Action, the Examiner incorporates the rejection set forth in paragraph 3 of the Office Action mailed May 18, 2004. Furthermore, in paragraph 6 of the Final Office action, the Examiner states Applicant's previous arguments filed November 17, 2004 regarding this reference have been fully considered but are not persuasive and summarizes the arguments as follows:

- a) Grezzo Page et al. is not a relevant reference against the present claims given that this reference does not disclose a modified pigment as presently claimed;
- b) Grezzo Page et al. does not disclose a gelling agent incorporated onto a substrate as required in present claim 26; and
- c) Grezzo Page et al. does not disclose the specific hydrophobically modified polyelectrolyte as required in newly added claim 42 or the specific modified pigment as required in newly added claims 43-44.

Regarding argument a), the Examiner states that, while Applicant has argued that Grezzo Page et al. discloses the use of a conventional acidic carbon black and not a pigment having an attached organic group that comprises at least one ionic group as presently claimed, the description of such a pigment in Grezzo Page et al. is a carbon black having attached ionic groups such as carboxylic acid groups. The Examiner further states that, while it is agreed that Grezzo Page et al. discloses the use of acidic pigments, such a pigment appears to meet the requirements of the present claims which only require an organic group, such as carboxylic acid groups, attached to a pigment. The Examiner concludes that this reference remains relevant because the pigment of Grezzo Page et al. and the pigment of the present claims appear to possess the same attached group (i.e., a carboxylic acid).

While Applicant respectfully disagrees, in order to advance prosecution of this application, claims 1, 2, 6, 7, 12, 18, 21, and 27 have been amended to be dependent from

U.S. Patent Application No.: 10/056,777
Art Unit: 1714
Page 12

allowed claim 20. Thus, claims 1-2, 6-7, 10, 12-18, 21-24, and 27 now depend directly or indirectly from an allowed claim and should therefore also be allowable. Claim 28 has been amended to recite the molecular weight feature of allowed claim 20. This claim should therefore also be allowable since, as noted by the Examiner in paragraph 7 of the Final Office Action, the graft copolymer of Grezzo Page et al. has a molecular weight which is in direct contrast to that recited in present claim 20. Finally, claim 19 has been cancelled without prejudice by this amendment, making the rejection of this claim moot. Therefore, Applicant believes that claims 1-2, 6-7, 10, 12-19, 21-24, and 27-28 are not anticipated by Grezzo Page et al.

Regarding argument b), the Examiner states that, while Applicant has argued that Grezzo Page et al. does not meet the limitations of present claim 26 since there is no disclosure that the gelling agent is incorporated onto a substrate, the ink of Grezzo Page et al. is ejected from an ink jet printer onto a substrate. The Examiner concludes that this meets the limitations of present claim 26 since the ink printed onto the substrate is therefore incorporated onto the substrate. The Examiner requests clarification.

Applicant respectfully disagrees. The present invention relates to an inkjet ink system comprising: a) a liquid vehicle; b) a colorant; and c) a gelling agent, wherein the gelling agent is a hydrophobically modified polyelectrolyte. The gelling agent may be used in various ways in the disclosed inkjet ink system. For example, in one embodiment, the gelling agent is incorporated into the liquid vehicle to form an inkjet ink composition comprising the gelling agent (see paragraph [0049] and paragraph [0056]). In another embodiment, the gelling agent is incorporated into a second jettable composition to form a gelling agent composition comprising the gelling agent (see paragraph [0049] and paragraph [0063]). In another embodiment, the gelling agent is attached to the colorant to form a modified pigment having attached at least one gelling agent (see paragraph [0050]). In another embodiment, the gelling agent is incorporated onto a substrate, either as a component of the substrate or as a coating on the surface of a substrate, to form a substrate comprising at least one gelling agent (see paragraph [0050] and [0065]). This embodiment is recited in claim 26.

Thus, the inkjet ink system of this embodiment would comprise a) a liquid vehicle, b) a

U.S. Patent Application No.: 10/056,777
Art Unit: 1714
Page 13

colorant, and c) a substrate having, as a component, the recited gelling agent. Here, the substrate comprises the gelling agent. Applicants believe that Grezzo Page et al. does not disclose, teach, or suggest an inkjet ink system with a substrate comprising a gelling agent. However, in order to more clearly describe Applicant's invention, claim 26 has been amended to be in independent form, and the phrase "is incorporated onto a substrate" has been replaced with the phrase "is a component of a substrate or is a coating on the surface of a substrate", consistent with paragraph [0050] of the present application. Applicant therefore believes that claim 26 is not anticipate by Grezzo Page et al.

Regarding argument c), the Examiner states that, while Applicant has argued that Grezzo Page et al. does not disclose the specific hydrophobically modified terpolymer required in claim 42, it is noted that this reference discloses a graft copolymer wherein the side chain is obtained from styrene and ethoxytriethyleneglycol methacrylate and is in the form of a macromonomer while the backbone is obtained from monomers including (meth)acrylic acid and ethyl acrylate. The Examiner therefore concludes that Grezzo Page et al. discloses the polymer required in claim 42. The Examiner further states that, regarding claims 43 and 44, while it is agreed that there is no disclosure in Grezzo Page et al. of the specific modified pigment as required in these claims, that is why this reference is combined with Cooke et al., which the Examiner believes discloses a modified pigment identical to that required in present claims 43 and 44.

While Applicant respectfully disagrees, in order to advance prosecution of this application, claim 42 has been amended to recite the molecular weight feature of allowed claim 20. This claim should therefore also be allowable since, as noted by the Examiner in paragraph 7 of the Final Office Action, the graft copolymer of Grezzo Page et al. has a molecular weight which is in direct contrast to that recited in present claim 20. Therefore, Applicant believes that claim 42 is not anticipated by Grezzo Page et al. Claims 43-44 will be discussed in more detail below.

Applicant therefore believes that claims 1-2, 6-7, 10, 12-19, 21-24, 26-28, and 42 are not anticipated by Grezzo Page et al. and respectfully request that this rejection be withdrawn.

U.S. Patent Application No.: 10/056,777
Art Unit: 1714
Page 14

Rejection of Claims under 35 U.S.C. § 103

The Examiner has rejected claims 43-44 under 35 U.S.C. § 103(a) as being unpatentable over Grezzo Page et al. (U.S. Patent No. 5,708,095) in view of Cooke et al. (6,110,994).

In paragraph 5 of the Final Office Action, the Examiner states that Grezzo Page et al. discloses an inkjet ink comprising an aqueous liquid vehicle, a modified pigment, and a hydrophobically modified polyelectrolyte, i.e., a graft copolymer. The Examiner also states that this reference also discloses a method of generating an image comprising incorporating the ink into an ink jet printer, jetting the ink onto a substrate, and generating an image.

The Examiner notes that the difference between Grezzo Page et al. and the present claimed invention is the requirement in the claims of a specific modified pigment. The Examiner therefore relies on Cooke et al., stating that this reference discloses a modified pigment having an attached group of the formula $\text{Ar-CO}_2\text{-R}$ where Ar is an aromatic group, CO_2 corresponds to the presently claimed spacer group, and R is a polymer such as a polyamide or polyester. The Examiner also states that such pigments are suitable for use in aqueous coatings and that the motivation for using such pigments is that they possess improved dispersibility and can improve colorfastness and abrasion resistance of the coating, which the Examiner states are also properties particularly relevant to ink compositions. The Examiner therefore concludes that, in light of the motivation for using the specific pigment disclosed by Cooke et al., it would have been obvious to one of ordinary skill in the art to use such pigments in the ink of Grezzo Page et al. in order to produce an ink with good colorfastness and abrasion resistance, thereby arriving at the claimed invention.

While Applicant respectfully disagrees, in order to advance prosecution of this application, claims 43-44 have been amended to recite the molecular weight feature of allowed claim 20. These claims should therefore also be allowable since, as noted by the Examiner in paragraph 7 of the Final Office Action, the graft copolymer of Grezzo Page et al. has a molecular weight which is in direct contrast to that recited in present claim 20. Furthermore, Cooke et al.,

U.S. Patent Application No: 10/056,777
Art Unit: 1/14
Page 15

which is cited for the type of modified pigment that is used, does not cure the deficiencies of Grezzo Page et al.

Therefore, Applicant believes that claims 43-44 are patentable over Grezzo Page et al. in view of Cooke et al. and respectfully requests that this rejection be withdrawn.

Allowable Subject Matter


In paragraph 7 of the Final Office Action, the Examiner states that claims 20, 25, and 29-41 are allowable. While Applicant is grateful for the allowable subject matter, in view of the comments provided herein, Applicant also believes that claims 1-2, 6-7, 10, 12-18, 21-24, 26-28, and 42-44 should also be found allowable.

Conclusion

In view of the foregoing, Applicant believes that this application is considered to be in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would further expedite the prosecution of the subject application, the Examiner is invited to call the undersigned.

Respectfully submitted,

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